D 301.81:
33/11 ✓

Combat Crew

Strategic Air Command

November 1983

UNIV. OF FLA. LIB ★ DOCUMENTS DEPT.
NOV 16 1983
★ U.S. DEPOSITORY

End of an Era

Combat Crew

GEN BENNIE L. DAVIS
COMMANDER IN CHIEF, SAC

BRIG GEN JACK K. FARRIS
INSPECTOR GENERAL

COL CHARLES J. WINGERT
DIRECTOR OF SAFETY

STAFF

EDITOR
MAJ. RANDY LAUTERBACH

ASSOCIATE EDITOR
KEN MAASSEN

EDITORIAL ASSISTANT
M. J. ABBOUD

IN THIS ISSUE

Competition Results 4
The Real Pilot 7
TITAN II — End of an Era 8
SAC International 10
So You're Going TDY 12
SIFC Crosscheck 14
CFIC Corner 18

On Our Cover

The era of the Titans is drawing to a close. For a nostalgic look back at the colorful beginnings of liquid fueled rocketry, see page 8.

SACRP 127-1 VOL. XXXIII No. 11 November 1983

COMBAT CREW is an internal publication of the Strategic Air Command with the primary purpose of promoting safety. The contents of this magazine are informative and not to be considered as directive in nature. Facts, testimony and conclusions of all mishaps printed herein may not be construed as incrimination under Article 31 of the Uniform Code of Military Justice. All names, dates and places used in conjunction with mishap stories are fictitious. Written permission must be obtained from Headquarters, Strategic Air Command, before any material may be reprinted by other than U.S. Air Force organizations. Use of funds for printing this publication has been approved by Hq. USAF, Distribution FX, controlled by IGFC. SAC units submit distribution requests through local PDO. Reader to copy ratio 9:1. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Contributions are encouraged as well as comments and criticism. Direct correspondence with the Editor is authorized. Address correspondence to Editor, Combat Crew, HQ SAC/IGFC, Offutt AFB, NE 68113. AV 271 2620.

PEOPLE . . . CAPA
THE FOUNDATIONS

Dr. Stefan T. Possony, writing on strategic power in **Defense and Foreign Affairs,** quotes Edward Gibbon, the noted British historian:

> *"Power rises when people and their leaders have spiritual vision and courage, and reach out for growth, order and liberty. Power falls when selfish interests predominate, self-satisfaction replaces concern for the future, injustice is allowed to prevail lest sacrifice must be invoked and bondage is preferred to facing danger."*

Dr. Possony uses the quote to make the point that the foundation of strategic power is not just weapons or numbers of people in uniform. It derives from an attitude, an approach to duty — from resolve. He cites Sun-Tsu, a Chinese military strategist who said, "To subdue the enemy without fighting is the acme of skill."

In SAC, this is our objective, expressed in our motto as "Peace is our profession." For nearly 40 years, we have been able to preserve peace not by destroying the enemy's machines of war, but by subduing his will to use them through our own strength and resolve. The point is that the enemy respects our "strategic power" — our potential to deny him the fruits of aggression. And that potential is tied to the nature of our people. It arises from their skills, mental awareness, depth of knowledge and resolve. One way we demonstrate and test these capabilities is through SAC's crew competitions.

When bombing-navigation competitions began, our primary mission was to deliver weapons through high altitude "gravity" bombing. As you know, our operations today are a bit more sophisticated. We have witnessed dramatic technological growth not only in terms of getting bombs on target but also in the field of strategic intercontinental missiles, inflight refueling capabilities and strategic reconnaissance platforms. As the demands on our crews have grown, so too has the sophistication of the means of testing those crews. The Bombing-Navigation Competition, the Missile Competition and the Weapons Loading Competition are among the many means de-

D 301. 81: 33/11

LITY . . . RESOLVE . . . OF STRATEGIC POWER

signed to test ourselves, refine procedures and demonstrate readiness.

This month, the 27th SAC Bombing-Navigation Competition focuses more on the crew and crew discipline and coordination than ever before. And that's appropriate; no matter how good a radar navigator is, if the pilot(s) and defensive team can't get around or through the defenses to the target or missile launch point, the crew won't meet its objectives. Whether you're on a six-man bomber crew or a two-man crew, you must work together effectively to be able to fight together effectively. This competition focuses attention on the strength of SAC — the ability of our crews to hit a target anywhere in the world, precisely, in any weather, at any time. The competition brings together not only our SAC combat crews, but our civilian and military leaders. Strategic airpower is held aloft, discussed and debated. This sends a clear signal of our preparedness and determination to resist tyranny, to keep the peace through strength.

The capabilities of our command are derived not just from our nuclear weapons and other armaments, but from the vision, courage and strength of our combat crews as well. You don't put weapons on the target by cutting corners, but rather by resourcefulness, attention to duty, and resolve. Your personal success in our competitions and our national success in deterrence are directly tied to your pride in daily effort, your self-discipline and your demand for excellence.

The challenge to you, as officers and airmen, is to attend to the present, for each mission represents an opportunity to strengthen and lend credence to our deterrent capabilities. It is also an opportunity to prepare yourself for the challenges of the future.

The Strategic Air Command's strategic power rests on your credibility, on your ability and your clear resolve. Deterrence is simply a perception in the enemy's mind that an action on his part will result in unacceptable consequences. The Bombing-Navigation Competition is one way to reinforce that perception. I congratulate those of you who have been selected to represent your units, and wish you all the best of luck.★★

UNIV. OF FLA. LIB ★ DOCUMENTS DEPT
NOV 16 1983
★ U.S. DEPOSITORY ★

Maj Gen Monroe W. Hatch, Jr.
Chief of Staff, SAC

Griffiss Wins!

416th BMW Takes Home the Barrentine

The team from the **416th BMW** carried home the Barrentine Memorial Trophy to New York, late in September, when they won SAC's 1983 Combat Weapons Loading Competition. The **Griffiss AFB** unit beat out all competing wings at Ellsworth during the annual competition with a final score of 2785 out of a possible 3000 points.

Gen Bennie L. Davis, commander in chief, Strategic Air Command, was on hand to present the Barrentine Trophy, a memorial to CMSgt Wilbur Barrentine, a dynamic force in munition loading for 15 years until his death in 1960.

Gen Davis said that events such as the combat weapons loading competition enhance the Air Force's day to day operation while helping to develop new techniques of operation.

Following close behind Griffiss was the 43d Strategic Wing from **Andersen AFB,** in second place and the 410th Bomb Wing, **K I Sawyer,** in third place.

Bitter cold and blowing snow greeted participants arriving for the competition September 19. Things quickly heated up, however, as 18 munitions loading and security police component teams descended on Ellsworth for the 14th annual loading competition.

At the opening ceremony SAC Chief of Staff Maj Gen Monroe W. Hatch told competitors, "The people competing here represent a very special category of airmen. The aircraft crew chiefs, loading and security teams here today have demonstrated at wing level the technical skills and motivation that have distinguished them from their contemporaries.

"This competition is intended to accomplish more than just another round of separating the good from the best," Gen Hatch continued. "Its ultimate purpose is to increase the technical proficiency of the individual, for it's your collective efforts that determine the readiness of our strategic forces.

"I admire you," he concluded, "your extraordinary skill and the deterrent strength you make possible to our country."

THE WINNERS

Barrentine Trophy Griffiss	416 BMW
Best Munitions Load Crew Andersen	43 SW
Best Security Police Unit Mather	320 BMW
Best Bomber Crew Chief Loring	42 BMW
Best Combined Load Crew K I Sawyer	410 BMW
Best B-52 Load Andersen	43 SW
Best FB-111 Load Plattsburgh	380 BMW
Best SRAM Load K I Sawyer	410 BMW
Best MMS Testing Andersen	43 SW
Best MMS Equipment Andersen	43 SW
Best Crew Chief Preload Exercise Loring	42 BMW
Best Crew Chief Postload Exercise K I Sawyer	410 BMW
Best Crew Chief Testing Griffiss	416 BMW
Best Combined SP Practical Exercise Mather	320 BMW
Best Offensive SP Practical Exercise ·Plattsburgh	380 BMW
Best Defensive SP Practical Exercise Fairchild	92 BMW
Best SP Confidence Course Performance Fairchild	92 BMW
Best SP Marksmen Loring	42 BMW
Best SP Supervisor Mather	320 BMW
Spirit Bell Award Barksdale	2 BMW

The competition was a hard fought battle all the way. Breaking tradition from all previous competitions, SAC officials changed the procedures for release of competition event scores in order to help build a greater element of suspense into the competition. There were only two score postings in this year's competition and because each team had been given only the scores of their own events, the standings among all competing wings were unknown.

"Anxious," therefore, was the best way to describe how participants felt about the first round score posting. After the point totals were revealed, moreover, it was discovered that a mere two points separated the top three teams in the competition.

The "Someplace Special" team of the 410th bomb Wing from Sawyer garnered 1370 of a possible 1420 points. Hot in pursuit were 1982's winner, the 28th BMW from Ellsworth with 1369 points and the 93d BMW from Castle (1368 points). Griffiss AFB was next with 1358 points.

SSgt Benvis E. Beachboard Jr of the 42d BMW was named the winner of the **Best Crew Chief Preload Exercise Award.** He aced the exercise with a total of 100 points.

Loring also won the Security Police Marksmanship Award. The 42d cops tied Mather with 227 points but nabbed a tie breaker.

An important addition to the competition this year was the use of MILES equipment for vehicles while involved in security police practical exercises. During previous exercises among security police elements in the competition, vehicles had to be administratively stopped. Just as the M-16 MILES has eliminated the old "You're dead" method of war games, the vehicle MILES has made capture and destruction of vehicles more realistic.

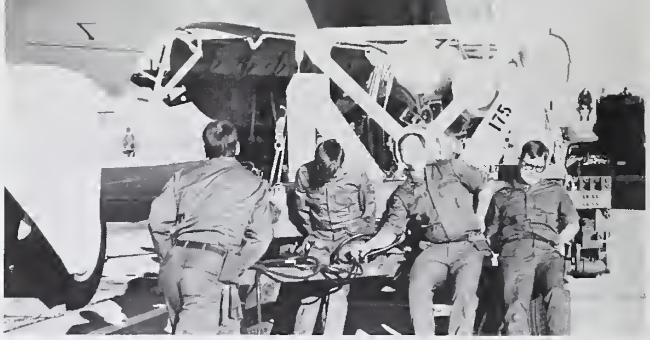
According to Lt Col Martin E. Strones, chief of the training, transportation and safeguards division for the Department of Energy, "the vehicle used for the exercise is equipped with MILES sensors or detectors, just as the M-16 MILES has sensors," he explained, adding the vehicle MILES has four types of indications used to specify a "hit."

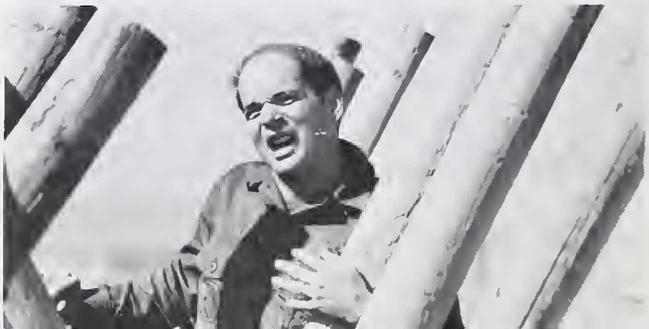
Col Strones said an on and off electronic siren signifies a near miss, just as in the M-16 MILES. A continuous siren signifies a "Kill," and is represented by one of two rotating lights which are secured to the vehicles front bumper, he added.

A green light indicates a LAW, or Light Anti Tank Weapon, was used to destroy the vehicle, whereas the red indicates the use of a M-16 rifle or a M-60 machine gun.

An explosive charge, similar to a small smoke bomb with the addition of a very loud "Boom" is released when the vehicle is considered destroyed, Col Strones continued. He also said the vehicle MILES equipment contained a microprocessor which allowed individuals to program what type of truck to be. This, in turn, automatically programs the degree of fire or number of hits necessary to destroy that particular type of vehicle. The mini computer also counts the number as they are

continued on page 24





The Real Pilot

This is the second article in a series, "The Real Pilot" published by our friends to the north in *Flight Comment* Magazine. Capt Steve Gallimore, CAF, is the author.

Last issue outlined preparations for entrance to the bar, so now you know how to look like a "real pilot". However, the image must be maintained by acting correctly after your entrance — the briefing continues.

Every real pilot knows when you stroll into the mess on Friday night the first thing your colleagues do — if they don't know you — is check the U.E.R. sewn on your flying suit. Therefore, for overwhelming impact, a few high profile crests are a necessity. International Airshows and combat crests (obtained through trades for flying suits, knives, etc) go over well. As you nonchalantly approach the bar firmly lead with your "high profile crest" shoulder through the crowd, letting other pilots know from visual impact and body language that, number one, you are a real pilot, and secondly, you're thirsty.

Ordering a drink requires a little pizzazz. Bartenders usually react quickly to a high pitched whistle or a vocal, "hey you" (note this also will attract the attention of others at the bar). Once you have his attention order as follows, "Double scotch on the rocks, easy with the rocks". You may substitute any other "man's" drink for scotch, unless you're still suffering from the night before in which case a non-alcoholic drink is acceptable providing you order it in a dirty glass. Remember liqueurs are for army officers, navigators and nurses. With your drink in hand you're ready for conversation. The real pilot must have great opening lines, such as: 'You must fly helo's, your voice vibrates'. 'I knew you were a fighter pilot when I saw you kissing the mirror' or 'I knew you were a trash hauler when I asked for a seat and you said see the loadmaster'. With friendships now established with other real pilots an exchange of knowledge and intellectual aviation repartee can take place.

During exchanges of aeronautical information between "real pilots" some basic rules apply to maintain your image and integrity;

a. other pilots and support staff should be referred to as "wimps" whenever possible i.e., the wimp in the tower, flight safety wimps, etc.

b. emphasize the stupidity of pilots involved in accidents (except "real pilots" who are heroes). These comments reinforce your image as a "top stick" in that you would not be that dumb.

c. when telling "war stories" ensure continual interest of other pilots by exaggerating events leading up to the punch line of the story. Ensure your story makes clear that regulations are only for "wimps" — "real pilots" play by their own rules.

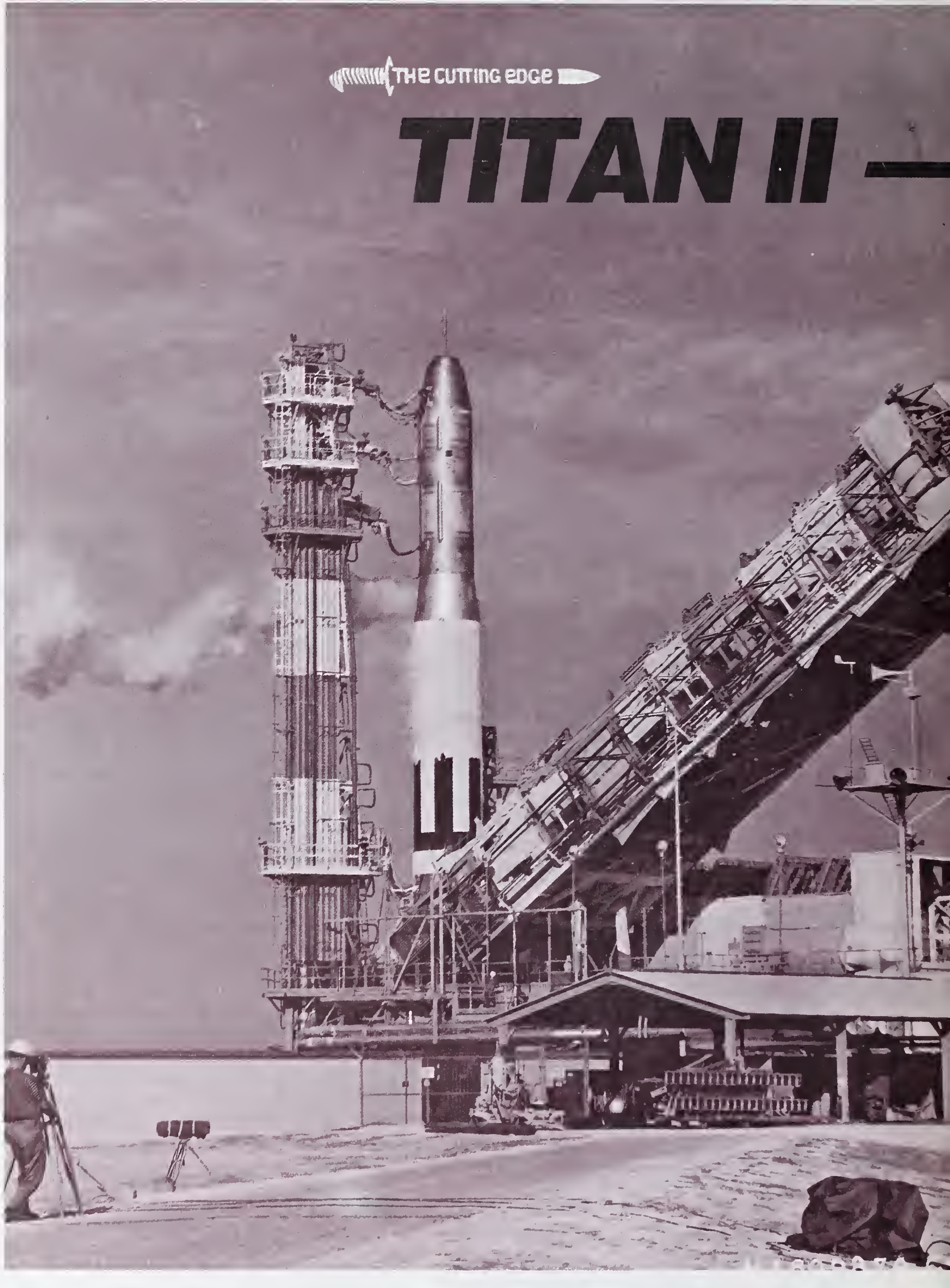
d. be sure to use "real pilot" terms; such as, grunts, grease-ball, zipper head, electric hat; etc.

e. it is understood that for emphasis of vital points, expletives with sexual connotations must be used. (Female "real pilots" may refer to notes when these expletives are required).

After the pilots who only pose as "real pilots" have departed the bar (normally after the food is gone) it's games time — specifically crud. Remember the "real pilot" will combine other games within the crud game, such as: darts for stabbing other team members, ping-pong rackets for blocking pockets, tripping as in hockey, checking as in football, kicking as in soccer and obscenities directed at the referee as in tennis. This excellent exercise offers the "real pilot" positive feedback as to his all round athletic ability and his conditioning. When playing with experienced "crudes" watch for chalk on opposition's fingertips. This is a positive identifier of cheating by erasing lines. (Real pilots will always attempt this ingenious play — remember if you don't win there's no point in playing).

Next issue departure from the bar and the drive home.

TITAN II —



TITAN under test. Being readied for test at Cape Canaveral, Florida, is TITAN, newest of the Air Force's big ballistic missiles. An intercontinental weapon for the Strategic Air Command, TITAN has a designed range in the neighborhood of 5500 miles, a top speed of 15,000 mph. It is being built for the Air Force by Martin Company, and is powered by an Aerojet General two-stage liquid rocket. TITAN was successful on initial test launch. **6 Feb 1959, Official U.S. Air Force Photo.**

End of an Era

Maj John R. Grellman
3901 SMES, Vandenberg

Imagine you're in a classroom with approximately 20 other students. You are entering training to become a crewmember in the Titan II missile weapon system. The instructor begins by introducing himself and telling you not to worry about passing the course because the Titan II will be phased out before your six months of training is complete. That may be a poor way to greet a class, but it does relieve some of the pressure created by the volumes of technical material you're facing.

This is a true story. It actually happened to me — **in 1968.** Deactivation of the Titan II finally began 14 years later, in October 1982. For a variety of military, political and economic reasons, Titans have remained an active part of our ICBM force well beyond their intended operational life.

Nine of our 54 Titans IIs have been deactivated to date and two others were previously destroyed in accidents. The final sortie is scheduled to come down in 1987. The removal of the last Titan II will mark the end of an important era for SAC's missileers. This article takes a quick look at that era, the era of our liquid propellant intercontinental ballistic missiles (ICBM).

The Titan II was an outgrowth of our early ICBM program. These first generation ICBMs relied on liquid propellant technology that was based on the German V-2 rockets of World War II. On 8 September 1955, President Dwight D. Eisenhower assigned the "highest national priority" to developing an intercontinental ballistic missile. Our first ICBM, the Atlas, was the initial result of that national program. The Atlas was powered by a cluster of three liquid propellant engines that burned liquid oxygen (LOX) and RP-1, a kerosene-like fuel. It was 75 feet long and 10 feet in diameter and could deliver a nuclear warhead approximately 6500 nautical miles.

The Atlas was understandably primitive by today's ICBM standards. Although the RP-1 was stored on the missile, the LOX had to be loaded on board as part of the launch countdown. The missile also had to be erected into launch position from its horizontal (D & E models) or vertical (F model) position below ground. These actions necessitated a long countdown. The time from key turn (launch commit) to liftoff was well over 10 minutes for all three versions of the Atlas. Each five-man launch crew controlled either a single missile or three missiles located adjacent to the launch control center.

The first Atlas, a D-model, was placed on strategic alert at Vandenberg AFB, California, on 31 October 1959. Our fleet of Atlas ICBMs grew rapidly, adding refined E and F models, eventually reaching a peak of 129 missiles in 13 squadrons. These Atlas squadrons were based at Vandenberg AFB, California; Fairchild AFB, Washington; Francis E. Warren AFB, Wyoming; Walker AFB, New Mexico; Dyess AFB, Texas; Schilling AFB, Kansas; Forbes AFB, Kansas; Altus AFB, Oklahoma; Lincoln AFB, Nebraska; Offutt AFB, Nebraska; and Plattsburgh AFB, New York, the only ICBM base ever located east of the Mississippi River.

All 13 Atlas squadrons were inactivated by the middle of 1965. The D model units were shut down between 1 May and 1 October 1964, with the E and F models remaining on alert until early 1965. The deactivated Atlases were shipped to Norton AFB, California for storage pending their future use as space boosters. It is interesting to note that these old Atlas missiles are still being used to launch satellites supporting important programs such as the NAVSTAR Global Positioning System and the Defense Meterological Satellite Program.

> **"That final deactivation will mark the end of our era of liquid propellant ICBMs."**

The Titan I was quite similar to its predecessor, except it was longer, with two distinct stages (versus the stage and one-half Atlas). It also used RP-1 and LOX, with the RP-1 stored on board and the LOX loaded during the launch countdown sequence. The missile was stored in a vertical position in a silo below ground and had to be raised to the surface for launch (similar to the Atlas F). The launch sequence was even longer for Titan I than for Atlas; it required approximately 30 minutes from launch commit to liftoff. The additional time was due primarily to the larger LOX tanks that had to be filled prior to launch. One four-man crew controlled three Titan I missiles that were connected to the launch control center by long tunnels.

There were six Titan I squadrons of nine missiles each. They were located at five operational bases: two squadrons at Lowry AFB, Colorado and one squadron each at Larson AFB, Washington; Beale AFB, California; Mountain Home AFB, Idaho; and Ellsworth AFB, South Dakota.

Titan I didn't last very long. The first missile became operational on 20 April 1962 and the last squadron became operational on 16 August 1962. Due to rapid technological advances in other ICBM development programs particularly Minuteman I and Titan II, the Secretary of Defense, Robert S. McNamara, accelerated the planned phaseout of the Titan I from the end of FY 1968 to the end of FY 1965. By 30 April 1965, all

Continued on page 26

SAC International

1Lt Scott L. Wagner
384 AREFW, McConnell AFB

The first thing you probably thought about when you found out your crew was going TDY to England was *"where are we going for a good time and what am I going to buy."* Your next thought should be *"what's it like flying over there."* I'd like to point out some nice to know and some need to knows for those tanker pilots and copilots making their first or second trip overseas. The following information was learned OJT by the author. You will need to become more familiar with position reporting, reading the enroute charts and the Flight Information Handbook. The DD Form 1801 must be filled out and radio terminology will be different.

Departure

Just like every mission, all important things happen at mission planning. The first thing that'll be different from training missions is the required coast out report . . . leaving the protective custody of ARTCC. In the Flight Information Handbook, FLIH, in the section under USAF HF/SSB and Command and Control Stations is a world-wide chart sectioned into zones. The zone numbers show you the airway station to contact for your coast out report. Further on, the frequencies (primary and secondary, day and night) are given. Since you've already checked the HF on the ground, your next transmission should be an airborne check prior to coast out. Be ready to read the NAT Track coordinates to ATC, they won't let you go until you do. When center gives the word, your coast out report should sound like this: "Loring, Loring Boxcar 50, on 243 upper, departure." When they answer you reply with *"Call sign,* departed *departure base,* at *Zulu takeoff time,* destination *base* at *ETA Zulu, flight level,* estimating *first CTA/FIR reporting point at time,* request you assume our primary guard and relay *last ARTCC."* Thereafter, usually every 10 degrees longitude, call back with "Loring, Loring, *Call sign, time, position, flight level, next point and ETA, next point* next." These stations also have the capability to handle your phone patches to command post and metro, however keep it short, everyone else crossing the water needs the freq too. If you lose contact with one station, try another, they can relay or assume your primary guard.

If you're a copilot and have the DNS, try to keep it updated prior to coast out so you can tell about where you are and when you're to make your position reports without bothering a very busy navigator.

Prior to coast in, it is absolutely necessary that you be familiar with the European airway system. Briefly, their jet routes are "upper airways" such as UB 15 and UG 21, meaning Upper Blue 15 and Upper Green 21. Intersections are frequently used too, so have the appropriate charts studied as well as the approaches, otherwise there's a good chance they'll hand you a clearance you won't understand.

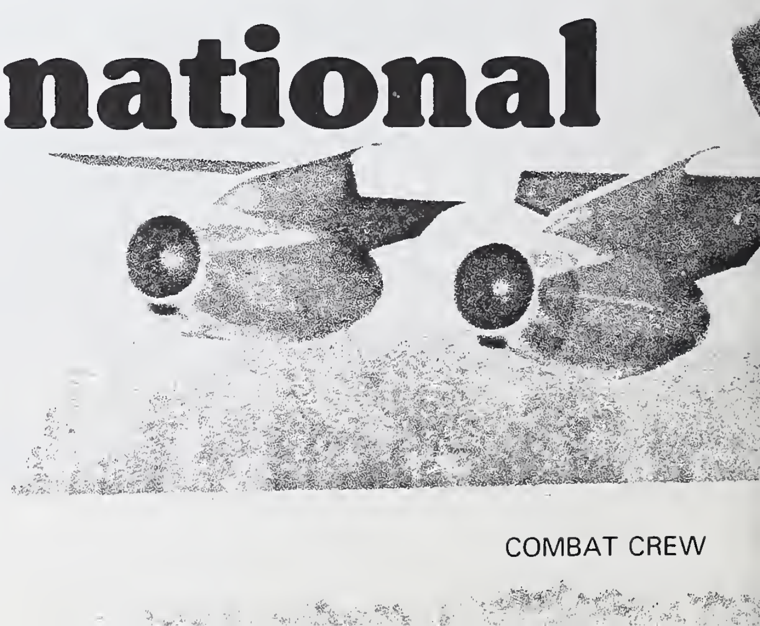
Most controllers in England will give you a "color coded" weather report of your base at some point during your arrival. Cloud cover will be in eighths instead of scattered or broken. See the metro section of the FLIH for further guidance.

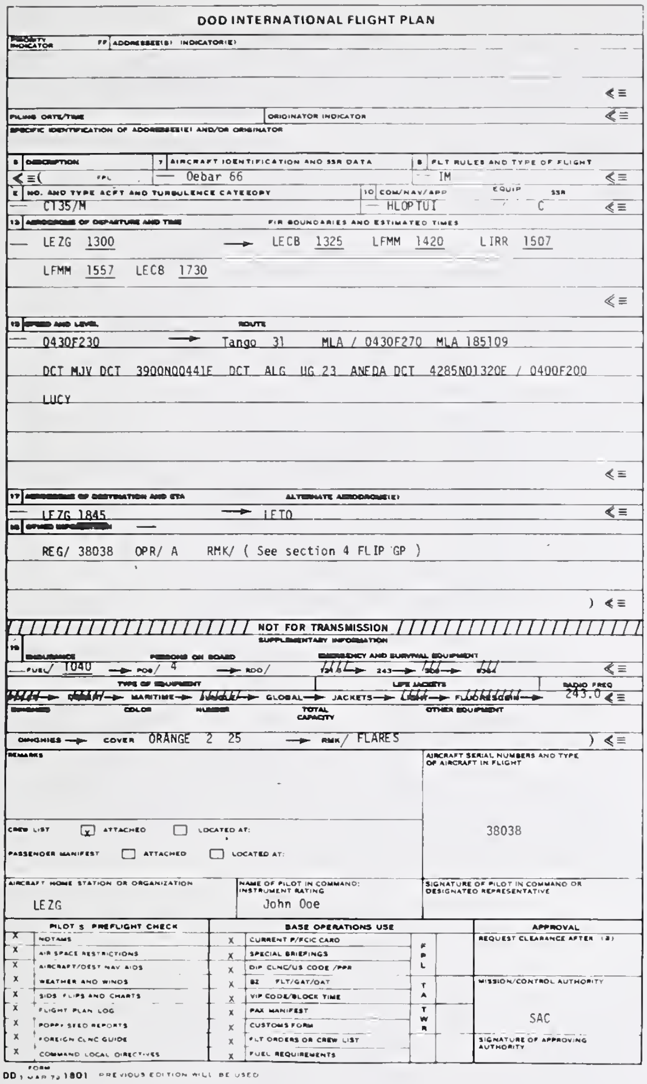
In Country

Since some of your flying will be on airways, a review of procedures and some helpful hints are in order. A percentage of this flying is not likely to be in radar contact. Listen up to the response to your initial departure calls for the term "radar identified." You can refresh yourself on the procedures in FLIP, but let me highlight. Along the airways you'll see the solid triangles at navaids and intersections. When you're not in radar contact, report arriving there, the time flight level, next point and ETA. You may even be asked to do this on your initial departure call. If you're off airways and cross a FIR or UIR boundary, a report will be required there. At these boundaries you'll probably be going into another country's airspace and changing controllers.

If you find yourself unable to contact your controlling agency at some point, note on the enroute charts that all airways and UIR/FIR boundaries have frequency and controlling agency names listed.

Language and accent differences can cause confusion. Try saying the three letter identifier of a position phonetically instead of trying to pronounce a name if you're in doubt. Remember to be patient and professional on the radios. You'll be sharing the frequencies with MAC, the Navy and Aeroflot and will find these pilots to be experienced and professional as well.





DOD INTERNATIONAL FLIGHT PLAN

PRIORITY INDICATOR FF ADDRESSEE(S) INDICATOR(S)

<≡

FILING DATE/TIME

ORIGINATOR INDICATOR <≡

SPECIFIC IDENTIFICATION OF ADDRESSEE(S) AND/OR ORIGINATOR

3 DESCRIPTION: <≡(FPL

7 AIRCRAFT IDENTIFICATION AND SSR DATA: — Oebar 66

8 FLT RULES AND TYPE OF FLIGHT: — IM <≡

9 NO. AND TYPE ACFT AND TURBULENCE CATEGORY: — CT35/M

10 COM/NAV/APP EQUIP SSR: — HLOPTUI / C <≡

13 AERODROME OF DEPARTURE AND TIME: — LEZG 1300

FIR BOUNDARIES AND ESTIMATED TIMES: → LECB 1325 LFMM 1420 LIRR 1507

LFMM 1557 LECB 1730

<≡

15 SPEED AND LEVEL: — 0430F230

ROUTE: → Tango 31 MLA / 0430F270 MLA 185109

DCT MJV DCT 3900N00441E DCT ALG UG 23 ANEDA DCT 4285N01320E / 0400F200

LUCY

<≡

17 AERODROME OF DESTINATION AND ETA: — LEZG 1845

ALTERNATE AERODROME(S): → LETO <≡

18 OTHER INFORMATION: —

REG/ 38038 OPR/ A RMK/ (See section 4 FLIP GP)

) <≡

NOT FOR TRANSMISSION

19 SUPPLEMENTARY INFORMATION

ENDURANCE: — FUEL/ T040 → PERSONS ON BOARD: POB/ 4 → EMERGENCY AND SURVIVAL EQUIPMENT: RDO/ 121.5 → 243 → 300 → 8364 <≡

TYPE OF EQUIPMENT: POLAR → DESERT → MARITIME → JUNGLE → GLOBAL → LIFE JACKETS: JACKETS → LIGHT → FLUORESCEIN → RADIO FREQ 243.0 <≡

DINGHIES → NUMBER / TOTAL CAPACITY / COVER / COLOR: ORANGE 2 25 → OTHER EQUIPMENT: RMK/ FLARES) <≡

REMARKS

AIRCRAFT SERIAL NUMBERS AND TYPE OF AIRCRAFT IN FLIGHT: 38038

CREW LIST ☒ ATTACHED ☐ LOCATED AT:

PASSENGER MANIFEST ☐ ATTACHED ☐ LOCATED AT:

AIRCRAFT HOME STATION OR ORGANIZATION: LEZG

NAME OF PILOT IN COMMAND: INSTRUMENT RATING: John Ooe

SIGNATURE OF PILOT IN COMMAND OR DESIGNATED REPRESENTATIVE

PILOT'S PREFLIGHT CHECK		BASE OPERATIONS USE	
X	NOTAMS	X	CURRENT F/FCIC CARD
X	AIR SPACE RESTRICTIONS	X	SPECIAL BRIEFINGS
X	AIRCRAFT/DEST NAV AIDS	X	DIP CLNC/US CODE /PPR
X	WEATHER AND WINDS	X	BZ FLT/GAT/OAT
X	SIDS FLIPS AND CHARTS	X	VIP CODE/BLOCK TIME
X	FLIGHT PLAN LOG	X	PAX MANIFEST
X	POPPY SEED REPORTS	X	CUSTOMS FORM
X	FOREIGN CLNC GUIDE	X	FLT ORDERS OR CREW LIST
X	COMMAND LOCAL DIRECTIVES	X	FUEL REQUIREMENTS

FPL / TA / TWR

APPROVAL

REQUEST CLEARANCE AFTER (Z)

MISSION/CONTROL AUTHORITY: SAC

SIGNATURE OF APPROVING AUTHORITY

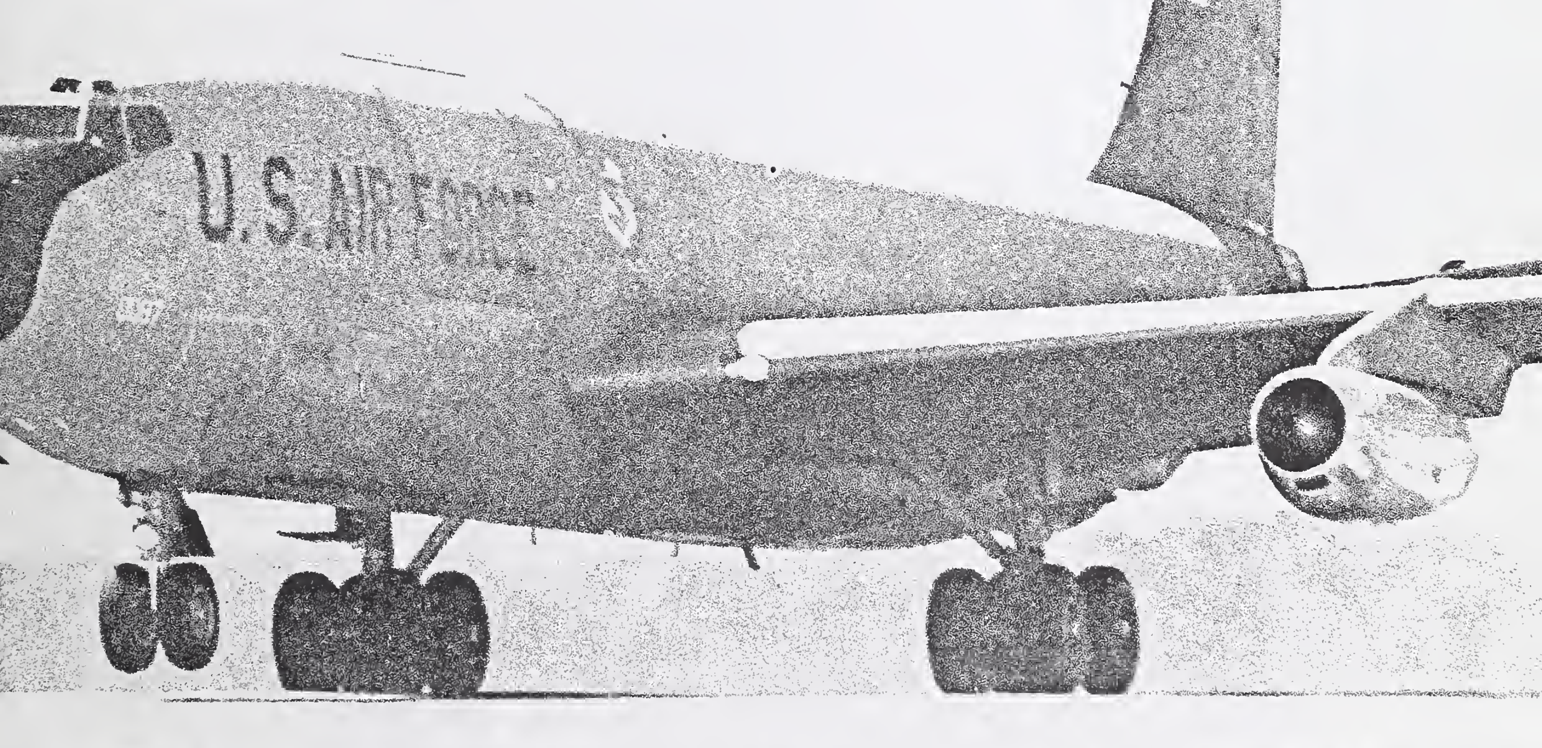
DD FORM 1 MAR 72 1801 PREVIOUS EDITION WILL BE USED

There are not as many Tacans in Europe so you may find it worthwhile to check your routes ahead of time to use what's available for your INS/DNS updates. An accurate position is a must when flying near the eastern borders. It is also wise to keep MIJI in the back of your mind when operating in Europe.

DD Form 1801

This will certainly be new to those of you who have never been overseas. The operations people at your overseas base will have your flight plan filled out for your particular mission except for a few items you'll need to complete. In the following examples, the underlined portions are what we were required to fill out.

Block 13 shows us departing Zaragoza AB at 1300Z and estimating the LECB FIR at 1325Z, the LFMM FIR at 1420Z and so on. We filled in the ETAs at mission planning. Block 15 starts out with the level off TAS and flight level, 430KTAS and FL230. The route is via the Tango 31 departure to MLA, then climbing to



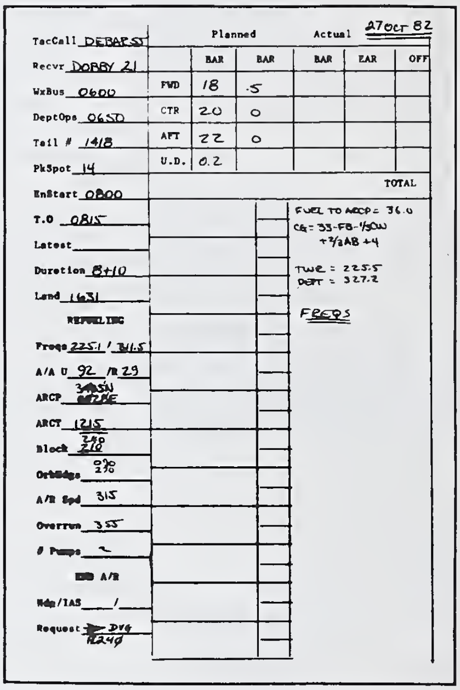
FL270, flying at 430KTAS, and going to the MLA 185109. Further on, note the longitude and latitude positions are mixed with Tacan radials and airways. ANEDA DCT 4258NO1320E means: at Aneda intersection request direct to 4258 North 01320 East. Lucy is your IAF at the destination, block 17, LEZG. On 1801s the ETA is the estimated landing time instead of the IAF time. In block 19 fill in the fuel on board, FUEL, and the number of people on board, POB. Much of the rest of the required information is similar to that required on the 175's. If you have any more questions, try reading FLIP GP or see your DONO or training flight shops, they're your resident experts.

Operational Mission Planning and Flying

Since some of the items previously discussed will be new to you, mission planning is likely to be rushed. This results in what I call "combat mission planning" and quick mission planning can compromise safety. So that you can devote your attention to altitudes, attitudes, airspeeds, sink rates, clearing and radio calls, consolidate all important information at mission planning. Put those ARCTs, altitudes, freqs and offloads on a card such as the one shown or something of your own design. When I was in a big hurry, it was a big help. Another good idea might be to "highlight" your route on the enroute charts and strip charts during mission planning.

Traffic is just as big a factor overseas as it is at home. In the PCA on a cell nav leg going from St. Louis radials to Aberdeen radials, Chicago center is a reliable source of traffic information. Converging on the sigonella Tacan one day were three airliners and our tanker. No one was in radar contact since all traffic separation is based on an ETA. Most of the Mediterranean area flying is similar.

Finally, before you go to finance to pick up your advance per diem, study the routes, review all the procedures and talk to someone who's been there. You don't want to become the subject of an international violation.



27 OCT 82

TacCall DEBARST
Recvr DOBBY 21
WxBus 0600
DeptOps 0650
Tail # 1418
PkSpot 14
EnStart 0800
T.O 0815
Latest
Duration 8+10
Land 1631

	Planned BAR	BAR	Actual BAR	EAR	OFF
FWD	18	.5			
CTR	20	0			
AFT	22	0			
U.D.	0.2				

TOTAL

REFUELING

Freqs 225.1 / 311.5
A/A U 92 / R 29
ARCP 3[illegible]5N [illegible]E
ARCT 1215
Block 240 210
OrbHdgs 090 270
A/R Spd 315
Overrun 355
Pumps 2

END A/R

Hdg/IAS /
Request → DVG R240

FUEL TO ARCP = 36.0
CG = 33-FB-1/5OW +2/3AB +4

TWR = 225.5
DEPT = 327.2

FREQS

So You're Going TDY

. . . Some items to keep in mind during your next TDY to a Tanker Task Force.

1Lt Scott L. Wagner
384 AREFW, McConnell AFB

TDY at a Tanker Task Force (TTF) is an unusual combination of opposites. It is an operational arena where tanker crews support tactical, strategic and reconnaisance missions. Yet a crew's relative unfamiliarity with the mission makes it a training environment also. Schedules are constantly changing. Takeoff times, fuel loads, sometimes entire missions are changed daily. Yet some TTFs maintain seasonal or mission specific sortie tasking (such as Coronet East, Alpha Long or Burning Wind) which require strip alert, ground spares or a crew rest/fly/crew rest cycle that virtually locks a crew into flying the same mission for a week or more. *TDY can be a "paid vacation" allowing travel to locales like London or Madrid or it can leave you snowbound in minus forty degree weather.*

In any event, TDY at a TTF is a chance for crews to experience a flying environment totally divorced from the stateside counterpart. It allows less experienced crewmembers to develop and apply new skills while it encourages "old heads" to expand their limits.

TDY considerations begin at home station with the predeployment checklist and an early start on accomplishing the items. The week before departure is, more often than not, a hectic period so anything that can be sorted out early is a plus in the time equation. If an OER or APR will be due while you're gone, is it feasible to accomplish it before you leave?

Plan to stay organized. Keep close track of your travel vouchers, travel orders, flight orders and MARS. Keep a detailed record of all of your flying and related activities including crew rest, bus times, takeoff times, flying times, landing times, mission name, how many receivers, offload totals, etc. At the very least this will make your after action report easier to write. Retain all of your receipts for billeting and finance. And don't forget to keep track of all of your purchases and prices. This will make itemization for your customs forms

"TDY can be a 'paid vacation' allowing travel to locales like London or Madrid or it can leave you snowbound in minus forty degree weather."

much easier and credible. All of this "stuff" can be put in some manila clasp envelopes and kept in your suitcase. One important thing to remember is that the TTF Intro Package should be brought on every flight — it's disconcerting to look for the fighter alternate sheet and remember you left it back in your VOQ.

Give adequate consideration to the unique stresses of TDY. Initially, one of the most impairing factors will be jet lag from your deployment. Crew rest regulations have as much, if not more, importance overseas than they do in the states, yet almost routinely crews violate them. This is a mistake. You will find that at some TTFs one mission's flying time may equal two or more stateside sorties. In addition, many missions are launched at odd hours of the morning. This plays havoc with a crewmember's circadian rhythm. These two factors alone are enough to measurably affect a crew's efficiency. Combine this with inadequate crew rest and an unfamiliar flying environment (like a 150 foot wide runway or a foreign controller) and you've got the right ingredients for an accident, violation or interception. Remember too, that every person reacts to fatigue differently, so eight hours of rest may not be enough for you if you've just put in a 16 hour day and you've got another eight hour flight ahead of you tomorrow.

Another regulation that is sometimes ignored by TDY crews is the "bottle to throttle" rule. AFR 60-16; Sup 1, page 3, para 5-1a, IMC 83-1, states, "Alcoholic beverages will not be consumed by aircrew members during an eight hour period prior to reporting to fly." The intent here is that at the very least your crew will not be drinking during that eight hours of uninterrupted sleep alloted for crew rest. This time period can be made more restrictive (up to 12 hours before bus time) by TTF OIs. Even if you stick to the letter of the regulation you can still be drunk and not fit for flight at bus time (as any flight surgeon can attest). With the added emphasis on blood alcohol testing and urinalysis in any mishap that causes dollar loss to the Air Force, a violation of this regulation may buy you a plane ticket back to the states and a redline on your career. The strangest and most frustrating issue here is that the crews that violate the regulation TDY would never even think of it at Base X. In this context, all crews should plan their scheduled ground spare mission as a "goer." It would terrify most people to rotate with one of the pilots smelling like Jack Daniel's.

Remember that every person on the crew may not be as overjoyed as you are to be overseas. The stress of four people being cooped up together in relatively close quarters can be significant to some people and can interfere with crew integrity and efficiency. Small quirks in your BO that you probably never noticed stateside can gradually (or suddenly) become personality flaws. Fist fights have broken out more than once over a friendly game of cards. The billeting situation can have a significant effect on this problem. I have heard of a situation in which a crewmember snored so loudly that his roommate simply could not get his crew rest in the same room.

The proverbial payoff comes on the day of the flight. Often due to maintenance problems or mission changes, that old enemy time compression sets in with its associated problems of speed and load stress. This is where the term "TDY Preflight" came in to being. This is where the deviation from standard operating procedures occurs. This is where things can and do get unsafe.

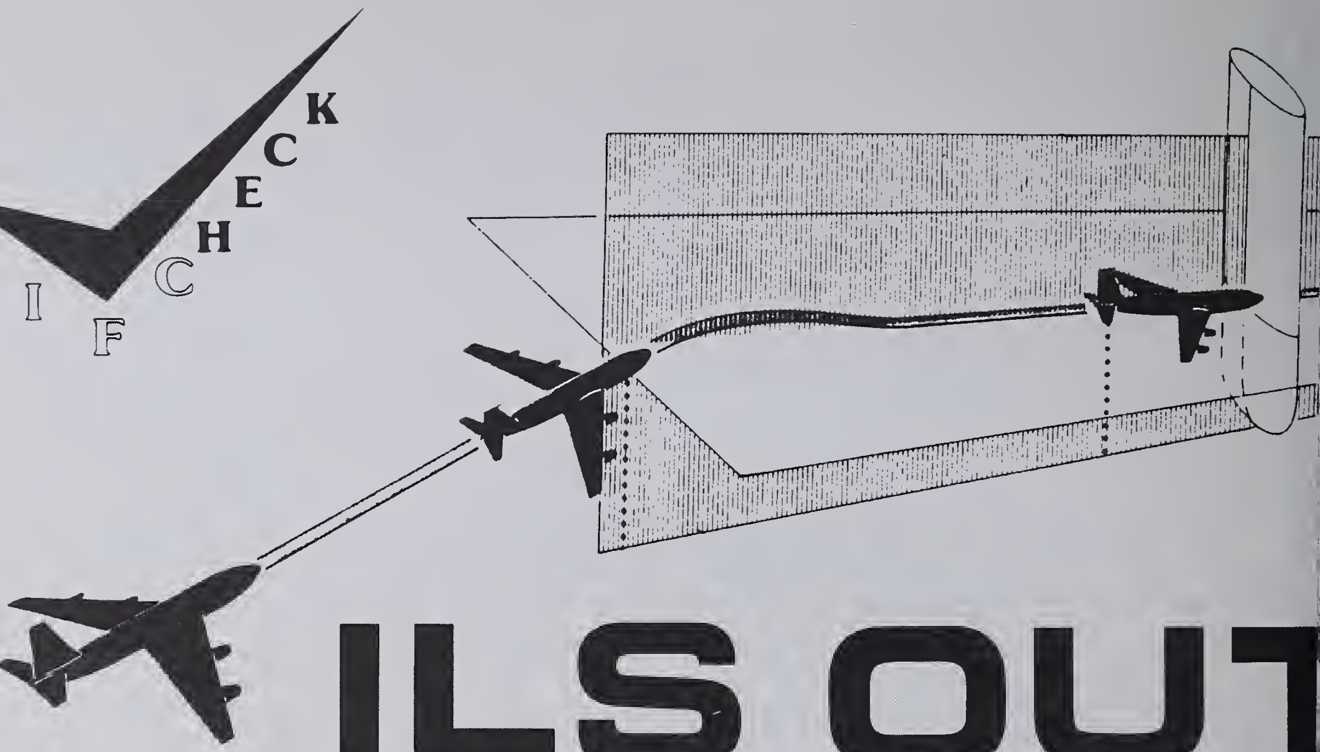
One school of thought contends that "If I conform perfectly to the checklist and tech data (by the book) then I could not get the on-time or accomplish the mission safely then it won't get done. A dead crew and bent airplane are ineffective."

An inexperienced crew may become dangerously task saturated as single-ship with hydraulic maintenance, late PAX loading and takeoff only 25 minutes away. In this situation, the danger level is high and even minor deviations from the standard routine could be unsafe. Another more experienced crew may be cell lead, have to defuel 5000 pounds of fuel, upload passengers and complete preflight with 20 minutes to takeoff yet make it to the hold line on time and safely. Of course the situations are not this simple and are further complicated by the fact that the "man in charge," the aircraft commander, is not always the most experienced person on the crew. Yet, it is still the AC's job to pace the crew and monitor the situation ensuring that the crew remains safe. An experienced AC might be able to take up the slack of the other crewmembers. The Dash-1 states, "this manual provides the best possible operation instructions under most circumstances, but is a poor substitute for sound judgment." Our stateside training, study, and testing is building that judgment so the "danger level" is pushed farther back. It is this sound judgment that disciplines a crew to avoid that easy TDY double standard of inadherence to operating procedures.

TDY at a Tanker Task Force is a challenging environment that can be an enjoyable, enriching experience, or it can be an interminable and frustrating exercise in waste. Hopefully this article generated some nodding heads and knowing smiles and will make at least one crewmember's tour more hassle free. Just remember next time you're enjoying your TDY that there's a lot to look forward to when you get back to the states. Like EP tests, no-notice flying evals, ground training, alert, generations and additional duties.

Have fun, fly safe!

CROSS CHECK SIFC



ILS OUT

"Sific 26, you're cleared for the MLS RWY 15 approach." Well, in the not-too-distant future, this clearance will be as common as baseball, grandma, and apple pie. The Microwave Landing System (MLS) has been mandated by ICAO to replace ILS as the standard precision landing system throughout the world. The ILS will be phased out over the next 15 years at civil and military installations; so, by the year 2000, MLS will be the only system in use. Wanting to keep our readers current on future trends in aviation, SIFC thought some background information on why the ILS is going the way of the Adcock Range* would be appropriate.

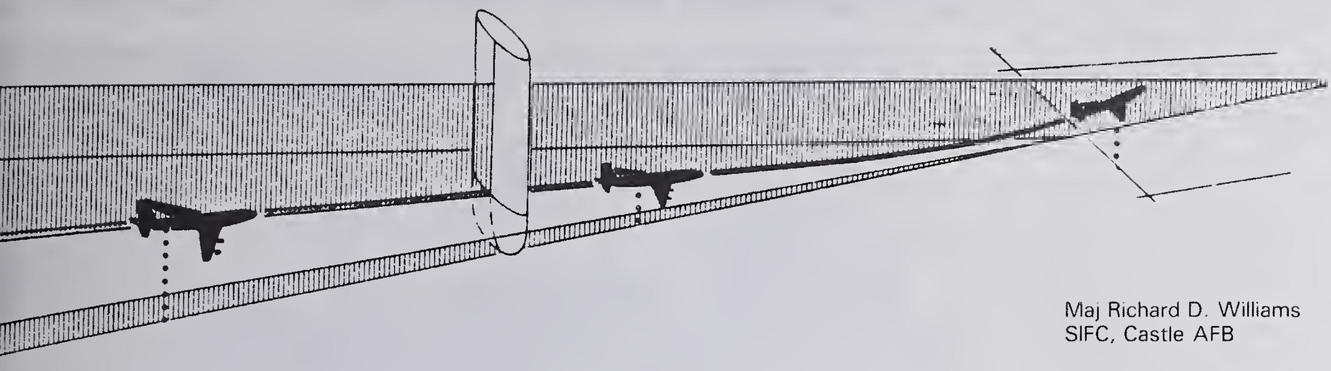
Although the ILS has served us well for more than 40 years at over 1300 installations throughout the world, several inherent limitations have prevented its use at many airfields. The MLS has been designed to eliminate or reduce some of the major ILS limitations. The five major limitations of the ILS are: interference, glide slope antenna location, precision, limited approach paths and frequency availability. Let's take a look at each.

Probably the ILS's most serious deficiency is its susceptibility to interference from terrain features such as topography, hangars, buildings and even taxiing aircraft. Interference can occur on both the localizer and glide slope signals, resulting in misalignment of the localizer and glide path and/or temporary loss of signal. An aircraft executing a missed approach, for example, can cause deviations in the localizer of ± 60 feet for up to 10 seconds. In some locations, interference from buildings and/or terrain features totally prevent the installation of an ILS system. The MLS's narrow beams and scan system eliminate most of the undesirable effects of terrain features on the signals.

At many airfields, lack of an acceptable location for the glide path antenna is a major obstacle. To produce the proper signal, part of the signal must be reflected off the ground in front of the glide path antenna. This requires a flat surface free of obstacles for at least 1200 feet in front of the antenna. Additionally, any change in the dielectric constant of this area caused by a change in moisture content of the ground (snow cover, tides, water table, etc.), can cause serious problems with the glide path signal. Unfortunately, terrain features and/or land availability at many airfields make an ILS installation impracticable. The MLS overcomes this limitation because the signal is not reflected off the ground.

The ILS glide path suffers from a lack of precision below approximately 100 feet AGL. The glide path signal becomes a hyperbolic curve starting around 100 feet and actually flares anywhere from 18 to 27 feet above the runway. This lack of precision close to the runway means autoland systems (Cat III) must convert to the radio altimeter at approximately 100 feet to provide accurate flare guidance. Since radio altimeters are not accurate unless over smooth pavement, approximately 2000 feet of prepared pavement must be available prior to the threshold. The MLS glide path is useable down to a minimum of 8 feet above the runway, making prepared surface prior to the threshold unnecessary.

The ILS is restricted to one single approach path which requires all aircraft to line up on final anywhere from 6 to 10 miles from the field. Unfortunately, this approach path in many cases is over populated areas,



Maj Richard D. Williams
SIFC, Castle AFB

. . . MLS IN

making the airfield a less than desirable neighbor. The 2½°-3° glide path combined with existing terrain, makes installation impossible at some airfields. The MLS has a minimum of ±40° azimuth and .9° to 20° elevation coverage, permitting a wide range of approach paths and glide slopes.

Finally, in some densely populated areas the 20 primary channels available for ILS are not enough to serve all the airports wanting ILS service. Although forty channels are allocated, the majority of ILS receivers currently in use are capable of receiving only 20. In an effort to partially solve the congestion problem in large metropolitan areas, ILS's to opposite or parallel runways where simultaneous approaches are not authorized, share the same frequency. For example, the three major airports in metropolitan New York (JFK, La Guardia, and Newark) have 13 ILS approaches on only six frequencies. The MLS solves this problem with 400 available channels and airborne equipment designed to receive all of them.

Although not necessarily a limitation of the ILS, the MLS has a single accuracy standard. Over the years, with the introduction of more accurate and reliable ILS equipment, we have seen three accuracy standards evolve. These standards, more commonly known as Cat I, II, and III, allow progressively lower minimums. ICAO has mandated a single high-quality accuracy and coverage standard for MLS. This standard is comparable with a Cat III ILS, permitting autoland on a regular basis for aircraft properly equipped.

One more uniquely MLS property is its portability. The large localizer antenna, combined with the siting problems mentioned above, does not make the ILS conducive to portable installations.

MLS antennas are small and siting problems are all but eliminated, making a portable or Tactical MLS (TMLS) feasible. In fact, the FY 1984 has given the go-ahead for the procurement of several TMLS units and airborne equipment to be installed on MAC C-130's. The TMLS weighs 400 pounds, can be erected in 30 minutes by two men and will provide an immediate Cat I (200-½) capability.

Last January, DOD designated the Air Force as the lead service for all DOD MLS activities. The first Air Force MLS is currently being installed at Shemya, Alaska, and should be operational by January 1984. Concurrently, SAC RC-135's are being retrofitted with MLS airborne equipment. Guard and Reserve KC-135's are high on the priority list for installing MLS equipment because of their operations out of civil fields. Civil plans call for 200 MLS installations by the end of 1988 and 100 each year thereafter until the conversion is complete.

So, you won't likely be executing an MLS approach by Christmas; but you might note Valdez, Alaska, already has a commissioned MLS (check the Alaska Terminal). Anyone interested in more information on the MLS should consult the Airman's Information Manual, the May 82 issue of the "MAC FLYER", or give us a call at SIFC, autovon 347-4571.

Have a safe and happy holiday season. We'll be back again in the January issue.

*If you don't know what this was, check with a rated O-5 or above!

GATEWAY TO

As any **crew dog** knows, the initiation in Strategic Air Command begins with training at the 4017 Combat Crew Training Squadron (CCTS), Castle AFB, California. The 4017 CCTS operates on the basis that those who fly for SAC will be the best trained crewmembers in the world. The current curriculum used at the 4017th not only trains the individual, but instills confidence to accomplish the mission and self assurance to work under any circumstance. SAC's cornerstone of PRIDE is passed on to new crewmembers in the hallways and classrooms of the 4017 CCTS.

Currently, approximately 2000 students a year receive any one of 64 different courses offered at the 4017th. Courses range from very basic instruction for boom operators and gunners to advanced training for wing level staff officers, such as wing and division commanders which reflects the instructor expertise available and the flexibility of the squadron.

With an everchanging environment, increased sophistication and complexity of weapon systems, the 4017 CCTS has made large strides in preparing our young crewmembers for the future. Besides the numerous courses already being taught, two new schools have been authorized, which are the Enlisted Aviation Undergraduate School (EAUS) and Navigator Offensive Avionics System and this article will further explain their function.

Col Loring R. Astorino, 93d BMW commander, welcomes student combat crew members to SAC and Castle AFB. Every new class at the 4017th CCTS receives a wing commander's orientation briefing. Emphasis is placed on the role of the future crew member in the command.

Enlisted Aviation Undergraduate School

It's the only one in the Air Force — The Enlisted Aviation Undergraduate School at the 4017 CCTS, Castle AFB. It's also four of the toughest weeks of academic training that potential enlisted aircrew members spend before going on to their respective technical schools.

Because of a high attrition rate in both the gunner and boomer career fields, SAC needed a program to insure that only the highest motivated and mature professionals entered the demanding career field. At a cost of $137,00 to train a boom operator, and $234,000 for a gunner, the program had to demand a better than average academic output, geared upon self-discipline and Air Force professionalism.

EAUS opened in January of 1982 as a test program for one year and it proved beyond a doubt the capability of identifying individuals not fit to perform enlisted combat crew duty. As of February 1983, EAUS academic curriculum tripled and requires a minimum passing score of 85%. The school consists of 43 courses of instruction, 27 criterion tests, 5 block exams, and one end of course exam. Subjects vary from basic aerodynamics, navigation and flight medicine to security awareness, drug and alcohol abuse and personal finances.

Aside from academics, EAUS maintains physical and self-discipline requirements via physical education, room inspections and drill. A weekly schedule is posted in the classroom to familiarize students with reading ground training schedules, complete with the dreaded "redline" changes.

Although fairly new, EAUS is striving to give SAC, the best possible enlisted aircrew members available in the world; one that is self-motivated, knowledgeable and reliable.

Offensive Avionics System

The Offensive Avionics System is an "airborne computer controlled electronic system" designed to fulfill the needed improvements to the B-52G/H weapon delivery capability. When President Carter decided to place air launched cruise missiles (ALCM) on B-52s, a more accurate and reliable programming data base was needed to align the missiles for a higher accuracy than the present system allowed, and thus the OAS was born.

Four major areas have been identified for integrated performance improvement: navigation, gravity weapon delivery, missile alignment/launch, and system management. The ALCM system consists of a rotary launcher in the bomb bay, two pylons for underneath the wings, three missile interface units, the missiles themselves and the software necessary to guide the missiles.

The 4017 CCTS Travel Team members are SAC's experts on the OAS/ALCM programming and launch procedures. The bomber navigator section presently has 25 instructors qualified to check out crewmembers in the OAS system.

SAC – 4017 CCTS

. . . Gearing up for the future

Maj Jimmy Clekler, B-52 navigator academic chief, instructs student in the new offensive avionics system (OAS). Castle AFB will assume responsibility for navigator bombardier training as the B-52 fleet is modified with the OAS.

From this small nucleus of experts, all of SAC's OAS and ALCM personnel will be trained, which includes navigators, radar navigators, pilots, copilots and staff personnel of all B-52 units receiving OAS/ALCM aircraft.

Unit training will continue through 1986, with aircraft modification and aircrew training lasting approximately six to eight months for a typical unit. The typical check out time for the pilot and copilot is to attend two days of academics, while the navigators receive two weeks of solid academics and simulators. Three flights are given for training with one flight designated for the crew certification.

Currently, students in the Undergraduate Navigator Bombardier Training (NBT) receiving assignments to B-52G/H model units acquire initial navigator bombardier training (NBT) at Mather AFB before proceeding to Castle for B-52 training. The Air Force Audit Agency recommended that NBT be transferred from ATC to SAC. This transfer is to be concurrent with the installation of the OAS, Weapons Systems Training (WST), and the Offensive System Mission Trainers (OSMT) at Castle.

The B-52G/H NBT transfer will begin in FY 1984, the same time of the delivery of the OSMTs and OAS modified aircraft to Castle AFB. SAC will assume responsibility for NBT and ATC will continue the ASQ-38 NBT until SAC no longer has a requirement for ASQ-38 crewmembers.

The Navigator Offensive Avionics System training program will be a combination of NBT and 4017 CCTS academics and will result in elimination of NBT. The course will be approximately 25 weeks in length (14 weeks for academics and 11 weeks for the flight line phase). The number of instructors required to operate OAS training will increase from the current ten to 30 by FY 1984.

The 4017 CCTS will continue to live up to its motto, "To train potential crewmembers to the highest level of occupational competence." This philosophy comes not totally from a sense of duty and mission, but a concern for personal professional development of Strategic Air Command's future leaders.

Capt John C. Witzel
SSgt Tad Jakes
4017 CCTS

Military inspections are conducted daily by instructors of the Enlisted Aviation Undergraduate School (EAUS). SSgt Tad Jakes, EAUS instructor, assures that new students maintain Air Force standards.

tos by A1C Mike Massey.

UTILIZING YOUR INST

The Strategic Air Command spends a great deal of time and money each year to send their experienced crewmembers through the Central Flight Instructor Course (CFIC) at Carswell and Castle.

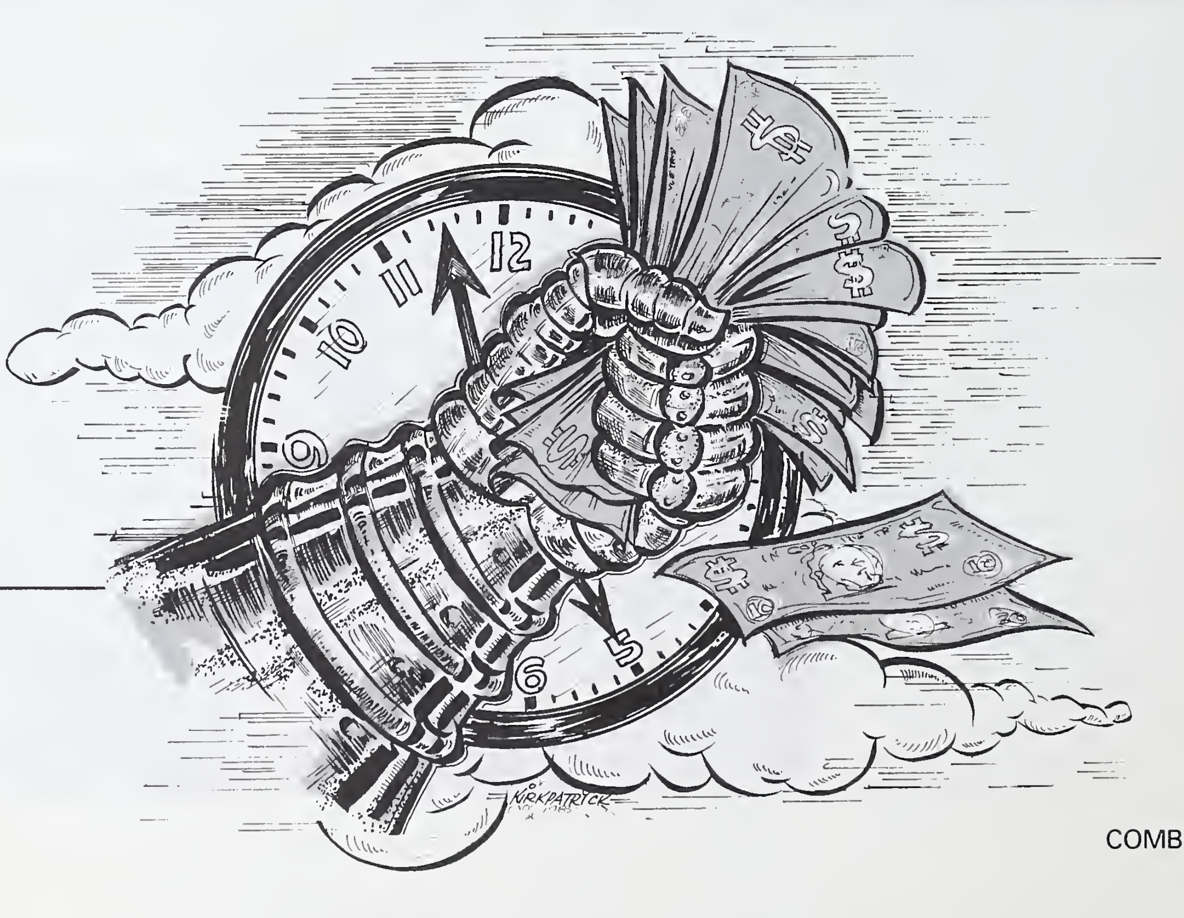
Maj Dick Hill
CFIC, Carswell AFB

This effort is to ensure that each unit has a viable and competent instructor force to keep their crew force flying safely and effectively.

Instructor candidates in each CFIC class point out, with some frustration, that the instructors at their unit are not being effectively utilized in many cases for various reasons. Some of the examples of nonutilization cited are: 1) *crewmembers going PCS right after upgrading to instructor;* 2) *a lopsided training program, i.e., after the initial unit checkout of a new crewmember, no instructors fly with them again;* 3) *one's specialty training is emphasized over another speciality;* 4) *since there is a perception that crewmembers and instructors can't get promoted performing cockpit duties, many instructors emphasize additional duties and attempt to get to staff positions as soon as possible — at the expense of their instructor duties;* 5) *many training flights do not adequately monitor all areas of their training program.*

Effective utilization of a unit's instructor force is a joint effort between the staff and the instructors. The staff must support and encourage their flight instructors to use their expertise. By this I mean that the staff should use their flight instructors as instructors and not as gophers or paper pushers. Additional duties should not be emphasized over instructional duties. The training flight should also be given the flexibility to develop new training programs and implement them.

The staff should emphasize to their instructor personnel the importance of their job and doing it well. If the instructors conscientiously assume the responsibilities of being flight instructors and carry out an effective training program, they will be re-



RUCTORS

warded when their evaluation reports are written. It is not fair to favor those personnel in staff positions over those instructors who are effectively running your training program. This emphasis would allow your flight instructors to remain in a flying training capacity rather than forcing them into staff positions to remain competitive career wise.

On the other side of the coin, the instructor personnel share equal responsibility for their utilization. If you want to instruct, you have to let people know your desires. Tell the scheduling section, your operations officer, your flight commander and training flight that you want to be used as an instructor as much as possible. In many cases, it may mean that you will have to give up part of your CCRR after alert or time that you haven't been scheduled for any activities. Remember the only way for you to improve as an instructor and have anyone benefit from your expertise is for you to get out there and instruct. As an instructor you have assumed the additional responsibilities of helping your units' crew force fly more effectively and safely. It is up to the instructors to develop and implement a comprehensive training program. How well each instructor does their job will determine the overall effectiveness of your units' training program.

The following suggestions are a few of the ways that instructors can be used to augment the normal training program. These suggestions have been successfully implemented in various SAC units in the past:

1) Have instructors of each specialty fly with each crewmember of the same specialty in their flight at least once each quarter. This would allow the instructors to check the crewmember's basic proficiency and to cover new techniques and procedures. The crewmembers would be ensured of getting continued flight instruction after the initial unit checkout. The instructor's proficiency would also benefit from the increased instructional experience.

2) Instructors can disseminate a lot of important information by conducting monthly aircrew meetings. Topics of special interest, trends and new programs can be discussed at these meetings. These meetings can offer an important forum for guest speakers from areas outside the squadron, i.e., maintenance personnel and wing staff. These experts usually have information of interest to the crewmembers but no way to brief them.

3) Having informal discussions with crewmembers while on alert can enable the instructors to cover a host of important information with smaller groups of individuals and answer their questions. Smaller group settings help encourage meaningful dialogue between the crewmembers and the instructor.

4) Most crewmembers receive very little exposure to the maintenance aspect while attending CCTS. The training flight can set up orientation tours of the maintenance complex for newly assigned crewmembers. Instructors can take crewmembers to the maintenance shops that deal with the particular equipment of their specialty. The maintenance personnel can brief crewmembers on how to optimize the use of their equipment during flight and how to accurately document maintenance discrepancies in the AFTO 781. A good writeup in the AFTO 781 can enable maintenance to locate and correct discrepancies in the shortest amount of time.

5) If newly assigned crewmembers are available, let them fly along with instructors on their crew sorties. The new crewmember can often learn a great deal by just observing how the instructor accomplishes the mission and how the crew functions as a unit.

6) Scheduling permitting, it would be helpful to give upgrading crewmembers several practice instructional rides prior to their departure for CFIC. After the upgrade candidates return from CFIC, it is also beneficial to give them a practice instructional flight just prior to their SACR 60-4 instructor evaluation.

7) Instructor navigators (IN) can better utilize the celestial training device (CTD) by supervising newly assigned navs or navs that are having difficulties with celestial navigation when they use the CTD. The IN can demonstrate various techniques to help the young navs accomplish their nav legs more effectively. The new navigators would be encouraged to use the CTD to practice new celestial techniques without fear of reprisal if a CTD nav leg doesn't meet SACR 50-4 accuracy standards. Training in celestial procedures can be more cost effective in the CTD than inflight.

Flight instructors are a very valuable asset to each unit. They are responsible for keeping the crew force current and proficient in their flying abilities. How effectively your units' flight instructors accomplish their tasks depend on how much support they receive from the staff and how they personally accept their responsibilities. Effective management and a highly motivated flight instructor corps will greatly enhance a unit's capability to accomplish its mission.

This year is the 27th anniversary of the Strategic Air Command's Bombing and Navigation Competition, which has been held periodically since 1948.

Competition has been interrupted for more important matters — the Korean conflict, the Cuban missile crisis, tanker support of Tactical Air Command in Europe and Asia, military cost reduction, Vietnam and the last time, 1975, because of another competition, HIGH NOON.

The scope and thrust of the original bomb competition has changed over the years. Changes from prop driven to jet aircraft, the addition of jet refueling tankers, visual to radar bombing, have seen the ground rules change to meet the requirements of the day.

Two years after SAC was born in 1946, an outgrowth of the strategic bomber's impact on bringing WWII to a close, the initial bomb competition substantiated the fears of Air Force leaders. Bombing proficiency had drastically weakened since the end of the year. The next year saw a stepped-up training program to improve radar bombing proficiency. The 1949 competition showed SAC crews had improved significantly. It was a good thing. Korea, where SAC B-29s flew 21,328 sorties, was less than a year away.

When the Bomb Competition resumed in 1951, it marked two firsts. One, two RAF crews added an international flavor. Two, the Fairchild Trophy was presented for the first time. In the years since, eleven other traveling trophies have joined the ranks, the latest being the General John D. Ryan Best B-52 Unit Trophy and the James S. McDonnell — Donald W. Douglas Sr. KC-10 Trophy in 1982.

Each additional trophy recognized a new facet of operation critical to the SAC mission. The Saunders Trophy, donated in 1960, has recognized the role KC-135 tankers have been making to the global mobility of the SAC force for 20 years. The Crumm Trophy, awarded to the unit making the best high altitude precision bombing, honors the crews of 15 B-52s lost over Vietnam during Linebacker II, an 11-day SAC operation in which more than 15,000 tons of bombs were dropped in the Hanoi-Haiphong area. The saturation bombing was judged a major factor in the rapid movement toward the Vietnam peace pacts signed less than a month afterward. Heavy concentrations of surface to air missiles, anti-aircraft emplacements and air to air missiles employed by the enemy in Vietnam emphasized the need for electronic counter-measures and with it the inception of the Bartsch Trophy in the 1979 competition. When the short range attack missile (SRAM) became an important part of the B-52/FB-111 weapons system, the Russell E. Dougherty SRAM Trophy became another incentive in support of mission effectiveness. Additionally, five other trophies are presented. The Meyer Trophy is awarded for the highest F/FB-111 damage expectancy rating, the Navigation Trophy for tanker celestial navigation, Best Crew Awards for each type aircraft, the Mathis for high and low bombing and the Doolittle for the best overall SAC numbered air force.

Many milestones have occurred in the competition. The 1953 competition saw SAC's first pure jet bomber, the B-47, introduced while the B-29, which delivered the war to Japan and North Korea, made its exit. In 1956, the B-52 Stratofortress, still the backbone of SAC, made its entrance and two years later the last of the prop bombers, the B-36, was phased out. From 1952 to 1957, the reconnaissance portion of the competition became a separate meet and in 1959 aerial refueling was added to the competition with the introduction of the all-jet KC-135 Stratotanker. The B-58 Hustler saw competition for a decade, from 1960 to 1969. Beginning in the 1970s, the FB-111 became the newest aircraft. Then in 1977, Air National Guard and Air Force Reserve KC-135s became an integral part of SAC's Bombing and Navigation Competition. Last year saw the new KC-10 Extender compete for the first time.

SAC crews who participated in the competition — almost a tenth of the SAC crew force — will join their commanders, distinguished civilian visitors, SAC staff members, numbered air force and air division officers as well as those of other major commands to exchange ideas at two symposiums. One is for military participants and the other for civilian guests.

The guests, who come from all parts of the country will learn more about SAC, its strategic programs and the needs of its more than 100,000 personnel from the commander in chief, Gen Bennie L. Davis, and members of his senior staff.

Military participants also will hear from Gen Davis. Additionally, aircrew members will hear from SAC's Deputy Chief of Staff for Operations, Maj Gen John A. Brashear, while maintenance personnel will hear from SAC's Deputy Chief of Staff for Logistics Brig Gen John J. Doran Jr. After lunch, aircrew participants will talk with fellow crews as well as the fighter pilots who ran the intercepts on their bombers.

The exchange of information and ideas among both groups in better understanding SAC's mission and ideas on how to improve proficiency, makes the symposium a valuable tool, especially after 27 years of bombing and navigation competitions. Testing teaches. All will learn from the competition and the symposium November 8 to 10 at Barksdale Air Force Base. Eighth Air Force and the 2d bomb Wing have worked hard as hosts, together with the civilians in the Shreveport-Bossier City area, to make the competition a memorable one.

With crews and civilian visitors coming from Loring AFB, Maine, to March AFB, California, the competition banquet and awards announcement and ceremony will take on a national flavor, one that ties the resolve of Americans together.

HQ SAC/DOTN

27th

SAC Bombing and Navigation Competition '83
1983
Fairchild
PERPETUAL TRO
STRATEGIC AIR COMMAND
BOMBING COMPETITION

PROFESSIONAL PERFORMERS

Aircraft Maintenance

Sgt Sharon L. Conary, 43 SW, Andersen AFB, is SAC Airman of the Month. Sgt Conary has demonstrated superior skills as the structural repair supervisor on all corrosion control phase inspections. Through her exceptional talents and management abilities, over 100 structural discrepancies are repaired by her team on each phase. Every followup inspection recorded by quality control has resulted in nothing less than a satisfactory rating. Because of her exceptional job knowledge she was chosen to assist on a skin change on a B-52D. She voluntarily worked extended hours completing the task in just four days rather than the estimated seven days. This timely completion returned a critical airframe to operational ready status well ahead of schedule. On numerous occasions she performed outstanding work during last minute "Red Ball" launch conditions, thus insuring an aircraft met its scheduled takeoff.

Missile Maintenance

Sgt Terry L. Hurd, 351 SMW, Whiteman AFB, is SAC ICBM Maintenance Airman of the Month. An outstanding missile handling team chief, Sgt Hurd's technical expertise and supervisory skills were especially evident recently when he responded brilliantly to a missile potential hazard at a remote launch facility. His team was performing a missile emplacement and had erected the transporter erector (TE) when the missile suddenly dropped two feet. Sgt Hurd immediately took charge of the situation, ensured appropriate agencies were notified and directed a coordinated team effort that eventually raised the missile safely back into the TE container. For the past two years Sgt Hurd's missile handling team section has been recognized by the 3901 SMES as the best MHT section in SAC.

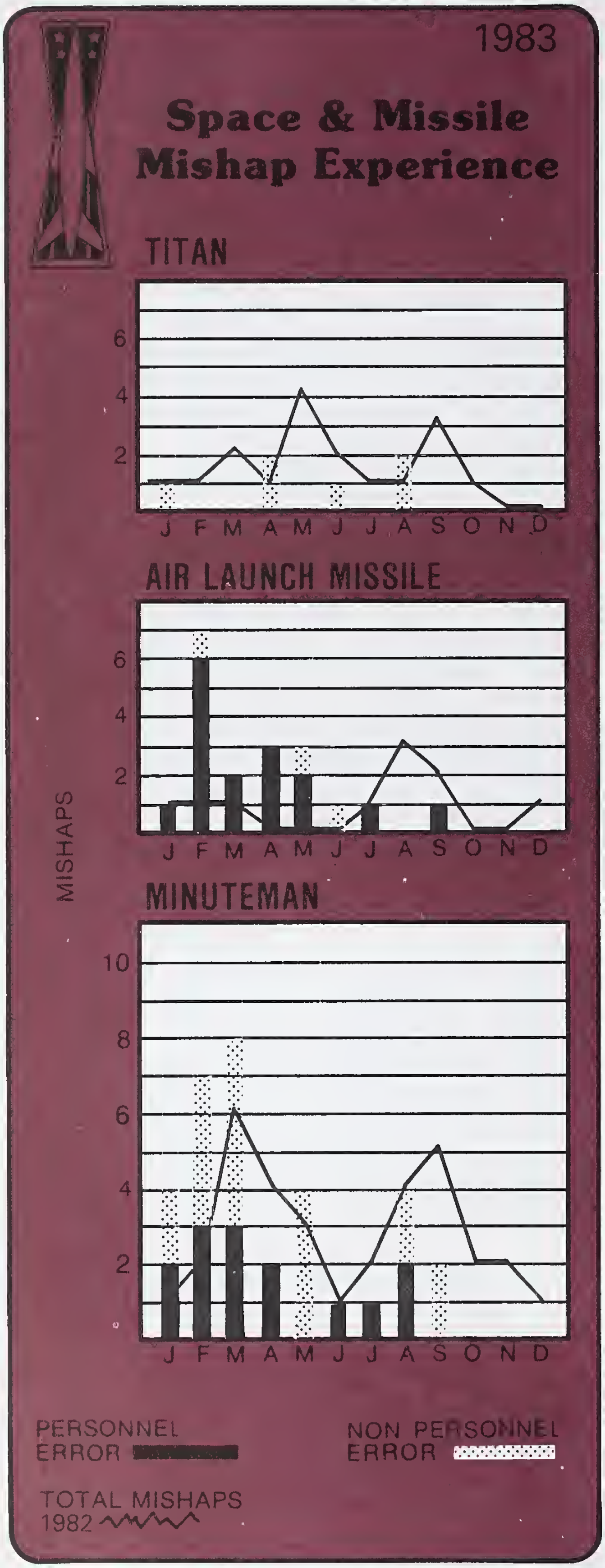
Flying Crew

Crew R-116, 97 BMW, Blytheville AFB: Capt David A. Razo, P; 1Lt Joseph Lepanto, CP; 1Lt William Boylan, N; and Sgt Harry Whitacre, BO, is SAC's Flying Crew of the Month.

While deployed to RAF Mildenhall, Crew R-116 experienced multiple inflight emergencies. On initial takeoff the landing gear failed to retract. The crew leveled at their three engine clean up height, accelerated straight ahead and raised the flaps. After checking circuit breakers and adjusting the nose wheel steering, the boom operator inspected the gear and found the left main gear was not level, preventing the retraction. Once this was known, the navigator coordinated a clearance off the SID, and the pilot notified the SOF of their problem. As the crew continued their climbout through 4000 feet, the number two engine oil pressure gauge went to zero PSI with a corresponding illumination of the low oil pressure light. The climbout was continued with the throttle at idle while the copilot researched the Dash-1. The engine was shut down in accordance with the tech order, leaving the crew with the gear down in a three engine heavyweight aircraft. While reaching a maximum altitude of 8000 feet, emergency fuel dumping of 77,000 pounds was completed. On returning to Mildenhall, a diverse approach was flown to an uneventful three-engine full stop, ending an exciting one hour mission.

Missile Crew

The 341 SMW Crew R-181/E-156, 1Lt Robert D. Dell'Aringa, MCCC and 2Lt Frank J. Oliver, DMCCC is SAC Missile Crew of the Month. While on alert recently at T-O Launch Control Center, the crew was performing duties at the squadron command post when they were notified that the wing alternate command post was shutting down. Control of wing missile resources was then assigned to T-O and crew R-181/E-156 immediately took numerous realignment actions to ensure proper command and control. During this activity, the crew alertly noticed an increase in control center air temperature and a significant amount of heat coming from the floor plates covering the motor generator. The crew immediately realized that these indications were abnormal and that without quick decisive action, the control center could require shutdown. While Lt Dell'Aringa monitored incoming status from the ACP sorties, Lt Oliver checked the motor generator exhaust vent to determine status. Lt Oliver reported there was no cooling air coming from the vent and that the cooling air damper to the motor generator was completely closed. After coordination with wing job control, the crew was directed to open the cooling air damper to allow sufficient cooling air to the equipment. This resulted in proper cooling of the motor generator and averted shutdown. Realizing the severe degradation of wing command and control that would have been caused due to shutdown, this crew used their expert understanding of the system to keep essential SAC assets on alert.



SAC Combat Weapons Loading Competition.

cont'd from page 6

fired, the Colonel said, and the kill signal is released when the total number of necessary rounds hit.

Another new item added to the competition this year was a confidence course event. The confidence course phase of the competition was designed to evaluate the physical abilities of all security police competitors.

Tension built throughout the weekend at Ellsworth as the competitors anticipated the final score posting on September 26th.

The final scores were finally posted, however, and the result was immediately clear: Griffiss' 416th BMW had emerged on top.

Griffiss' strong and steady performance in all events of the competition had secured the win even though the **416th BMW** could boast of only one category winner: **Best Crew Chief Testing.**

The 43d SW from **Andersen AFB,** while finishing second overall, could boast of winners in four categories: **Best Munitions Load Crew, Best B-52 Load, Best MMS Testing, and Best MMS Equipment.**

As mentioned previously, the 410th BMW from **K I Sawyer,** which led competitors after the first score posting, finished third. Honors to the 410th included the **Best Combined Load Crew Trophy, Best SRAM Load** and **Best Crew Chief Postload Exercise.**

Besides taking home the award for Best Crew Chief Preload Exercise, SSgt Benvis E. Beachboard Jr from the 42nd BMW also was named the **Best Bomber Crew Chief.**

The coveted **Best Security Police Unit Trophy** went to the 320th Bomb Wing from **Mather AFB** which also won awards for **Best Combined SP Practical Exercise** and **Best SP Supervisor — TSgt Newalow Weekes.**

Two other security police awards went to the 92nd BMW from **Fairchild AFB** — one for **Best Defensive Security Police Practical Exercise** and another for **Best Security Police Confidence Course Performance.**

The 380th Bomb Wing of **Plattsburgh AFB** was honored for the **Best FB-111 Load** as well as having the **Best Offensive Security Police Exercise.**

Rounding out the top ten teams in the final wing standings were: the 93rd BMW from Castle AFB, in fourth place; the 19th BMW from Robins AFB in fifth; the 42nd BMW from Loring AFB in sixth; the 380th BMW from Plattsburgh AFB in seventh; the 7th Bomb Wing from Carswell in eighth; the 509th BMW from Pease AFB in ninth; and the 96th BMW from Dyess AFB, finishing in tenth place.

The 2nd Bomb Wing from **Barksdale AFB,** also took the **Spirit Bell Award,** which is voted by all 18 competing teams to that one team displaying the greatest esprit de corps.

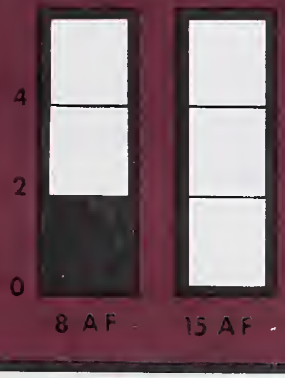
As emphasized throughout the competition, the agony of defeat was never present at Ellsworth. Every team felt the pride of representing their wings as the best at what they do. Over 200 men and women of near equal ability met in spirited competition over a period of ten days. Only a few went home with trophies, but all left as winners.

SAC'S TEN YEAR FLYING SAFETY RECORD

CLASS A FLIGHT MISHAPS

YEAR	73	74	75	76	77	78	79	80	81	82	83
TOTAL MISHAPS	5	8	4	4	4	1	5	4	4	2	2
FLYING HOURS 100,000	6.1	5.1	4.2	3.9	3.7	3.6	3.6	3.4	3.5	3.5	2.2
FATALITIES	0	14	7	22	10	5	7	2	14	9	7
RATE	.82	1.6	1.0	1.0	1.1	.28	1.4	1.2	1.2	.58	.65*

*Estimated Rate based on 310 000 Flying Hours



27997

AUG FLYING HOURS

219064

1983 FLYING HOURS

APRIL	B-52G
JUNE	FB-111A

1983 MISHAP STATS

END OF AN ERA

cont'd from page 9

54 Titan I missiles had been deactivated. They were shipped to Miro Loma AFS, California, for storage and subsequently relocated to Edwards AFB, California where they remain today. For a variety of reasons, these Titan I missiles have not been used as space boosters.

Titan II is the last and best of our liquid propellant ICBMs. It was developed to eliminate or reduce the serious shortcomings of the Atlas and Titan I missiles. The Titan II is more powerful, accurate, reliable and survivable and can deliver a larger payload than any of its predecessors.

Titan II gained these advantages primarily as a result of advances in liquid propellant technology. Instead of RP-1 and LOX, it uses a hydrazine compound for fuel and nitrogen tetroxide as an oxidizer. Both of these propellants can be stored on board the missile indefinitely.

The Titan II is our only liquid propellant ICBM to be launched directly from an underground silo. The combination of silo launching and storable propellants drastically reduces reaction time. A launch sequence required slightly less than one minute compared to the 10+ and 30 minutes for the Atlas and Titan I respectively. A Titan II missile combat crew consists of two officers and two airmen colocated with their missile. It is our only ICBM ever to use both male and female combat crew members. Whereas a Titan I crew controlled three missiles, a Titan II crew controls only one sortie.

There are six Titan II squadrons of nine missiles each. They are located at Davis-Monthan AFB, Arizona; McConnell AFB, Kansas; and Little Rock AFB, Arkansas, with two squadrons at each base. The first missile assumed alert on 8 June 1963 and all 54 were on line by the end of that year. By the time our last Titan II is deactivated, it will have been on alert for almost 24 years, a record for ICBMs.

That final deactivation will mark the end of our era of liquid propellant ICBMs. Advances in solid propellant technology have made liquid systems obsolete and they will probably never return. Nonetheless, they provided a vital deterrent for our country, an important heritage for SAC's missileers, and a good career for at least one member of the "phasing-out Titan II Class of '68."

The launch sequence of a Titan II at Vandenberg AFB.

SAC SAFETY SCREEN

19 BMW, Robins Crew R-105: FP Capt Don A Keener, CP 1Lt Thomas G Fister, NN Capt Christopher Austin, BO SSgt Kelly D. Hankins

19 BMW, Robins Crew R-10: FP Capt Brooks B Tyler, CP 1Lt Frederick W Kornahrens, RN Capt Gerald E Valintini, IN 1Lt John A Ricci II, EW 1Lt Anson L Holley III, AG SSgt Eric Snyman

19 BMW, Robins Crew E-13: IP Maj Ernest T Torpey Jr, CP 1Lt Randall E Rice, RN Capt Donald Pennington, IN 1Lt Gregory D Herbert, EW 1Lt Robert M Homola, AG SrA David R Liska

911 AREFS, Seymour Johnson Crew S-102: P Capt Louis P Bello Jr, CP 1Lt Susan Y Desjardins, N Capt David A Milewski, BO TSgt Stephen A Sweet

97 AREFS, Blytheville Crew R-121: P Capt Jack B Lynn, CP 1Lt Steve G Csaba, N 1Lt Michael G Malone, BO SSgt Eddie J Cole

340 BMS, Blytheville Crew R-24: P Capt William C Hoferer, CP Capt Doyle K Freeman, CP Capt Michael C Chatman, RN Capt Francis M Mackie Jr, N 1Lt Dwight E Wolfe, EWO 1Lt James D Windon, G Sgt Michael D Moore

340 BMS, Blytheville Crew R-30: P Capt David G VanOrsow, CP 1Lt Brian K Hall, RN Capt Robert W Edwards, N 1Lt Larry G Walker, EWO 1Lt Steven A Denham, G SSgt Donald D Miller

44 SMW, Ellsworth Crew S-204: MCCC Capt Ted S Burke, DMCCC 2Lt Curtis L Buckles

91 SMW, Minot Crew S-111: MCCC Capt Larry J Simmons, DMCCC 2Lt Robert T Renfrew III

341 SMW, Malmstrom Crew R-016: MCCC 1Lt Anthony M Reinberg, DMCCC 2Lt Gerald A Martin

390 SMW, Davis-Monthan Crew E-190: MCCC Capt Hazel Haynes, DMCCC 2Lt Ronald H Cole, MSAT SrA Martin E McDaniel, MFT A1C Lawrence G Summers

351 SMW, Whiteman Crew S-142: MCCC 1Lt David P Marone, DMCCC 2Lt Jerry L Adams

308 SMW, Little Rock Crew R-062: MCCC 1Lt Michael Mauney, DMCCC 2Lt Joseph Mullis, MSAT A1C Charles Futrell, MFT David Cason

381 SMW, McConnell Crew E-042: MCCC Capt Eric A Howell, DMCCC Capt Deborah L Cockayne, MSAT Sgt Gayland L Pyle, MFT Sgt Donald E Hall II

905 AREFS, Grand Forks Crew S-101: P Maj Richard A Robbins, CP Capt Michael L Beil, N Capt Gary L Ellsworth, BO TSgt Richard E Spencer

905 AREFS, Grand Forks Crew S-102: P Capt David C Patton, CP 1Lt Mark K Reinke, N Capt Eugene S Richardson, BO Sgt Ross A Kilbride

905 AREFS, Grand Forks Crew S-103: P Capt Dennis R Drain, CP Capt Glen D Ungaro, N Capt Douglas J Goebel, BO SSgt Dennis E West

43 SW, Andersen Crew E-11: P Capt Oliver W Harrison, CP Lt Jeff C Mason, RN Capt Glenn A Pallazza, N 2Lt Donald E Simmons, EW 2Lt John A Damico, G SSgt Jeffrey Zurakowski

43 SW, Andersen Crew E-24: P Maj Larry C Franks, CP 1Lt Scott K Marble, RN Capt David A Golinski, N 1Lt Donald E Lester, EW 1Lt Stephen C Barron, G Sgt Ronnie C Mason

128 ARG, Gen Mitchell Fld, Milwaukee, WI: P Capt James L Malenke, P Capt Fredrick L Walton, N Maj Richard E Spieler, BO MSgt Roger A Steckhan

44 SMW, Ellsworth Crew S-053: MCCC 1Lt Richard B Austin IV, DMCCC 2Lt Dennis C Newman

UNIVERSITY OF FLORIDA
3 1262 09683 6167

BIRDS DO FLY IFR . . .

FLARE

VFR, at night, in the day, at low level, and at high level . . . in fact, birds can and will fly any time and any place SAC aircraft fly!